

REMARKS

Claims 1-54 are pending in this application. Claims 1, 2, 10, 18, and 45 are argued in the Office Action. Claim 1 is independent.

Drawings

The drawings have been objected to for not showing every claimed feature, i.e., the “common operation control voltages” of claim 18. Applicant disagrees.

The feature of claim 18 is shown in, for example Figs. 4-7, as common voltage Vcnt1 and common voltage Vcnt2. Furthermore, the specification, with respect to figure 4, on page 18, states, “Further, as shown in Fig. 4, common current control voltages Vcnt1 and Vcnt2 may be used for the unit circuits 2.”

At least for these reasons, Applicant requests reconsideration and withdrawal of the drawing objection.

Claim Rejection – 35 USC 102

Claims 1, 2, 10, 18, and 45 have been rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,218,899 (“Ezell ‘899”). Applicant traverses this rejection.

Ezell ‘899 is a continuation of U.S. Patent No. 6,100,761 (“Ezell ‘761”). Ezell ‘761 is discussed in the present application. In the present specification, it is stated that Ezell

'761 realizes variable gain using a variable resistor configured as a resistor ladder and associated nMOS switches. In other words, Ezell '761 teaches variation of the amplification by adjusting the resistor ladder providing current to the amplifying transistor. The present specification expresses two problems with respect to the configuration of Ezell '761. First, implementing a resistor ladder using a standard CMOS process and nMOS transistors as switches results in a large device. Second, because the amount of current is varied by the resistor ladder, a bias circuit is used to suppress the fluctuation of the transistors. The added bias circuit leads to a still larger device.

In a preferred embodiment of the present invention, amplification is adjusted by controlling the size of the amplifying transistor. The size of the amplifying transistor is the subset of transistors making up the signal input transistor, where the subset of transistors provide an effective channel width and channel length for the amplifying transistor. The current control circuit determines which percentage of transistors making up the signal input transistor contribute to amplification of the input signal.

Thus, a difference between Ezell '899 (as well as Ezell '761) and the present invention is that Ezell '899 teaches control of amplification by using a variable resistor and bias circuit attached to the amplifying transistor, while the present invention controls amplification by varying a size of the amplifying transistor. In order to clarify this distinction, claim 1 has been amended as follows:

“a current path control section which adjusts a percentage of the amplifying transistor that contributes to amplification of the input signal and a path of a current through the amplifying transistor.”

The amendment makes explicit that the intended meaning of “size” is the percentage of the amplifying transistor that contributes to amplification of the input signal. The word “percentage” takes on its ordinary dictionary meaning of “part of a whole.” Applicant submits that Ezell ‘899 fails to teach or suggest each and every claimed element of claim 1, as amended. Applicant requests reconsideration and withdrawal of the rejection.

Furthermore, with respect to claim 45, Applicant submits that Ezell ‘899 also fails to teach or suggest maintaining a current flow through the amplifying transistor at a constant level. In Ezell ‘899, the amount of current flow is varied by adjusting the resistor ladder.

Conclusion

In view of the above amendment, applicant believes the pending application is in condition for allowance.

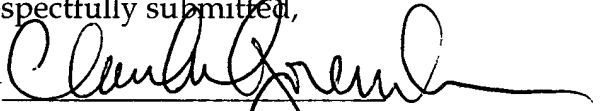
Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Robert W. Downs (Reg.

No. 48,222) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

By 

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